

BIBLIOGRAPHICAL NOTICE.

A Manual of the Subkingdom Cœlenterata. By JOSEPH REAY GREENE, B.A., Professor of Natural History in Queen's College, Cork. London, 1861. Longmans. 12mo.

AFTER an interval of about two years, we have to notice the appearance of the second of Messrs. Galbraith and Haughton's series of scientific manuals; and it is not too much to say that in the execution of the present little work Professor Greene has fully equalled, if not surpassed, his former effort. The length of time that has elapsed between the publication of the two manuals is perhaps to be regretted; but our knowledge of the interesting animals now commonly known as Cœlenterata is in such a progressive state, and even the literature of the subject requires such careful study to enable one to see one's way at all clearly through the obscure labyrinth of errors, misconceptions, and confusions of all kinds, gradually set up by different authors, that we can hardly wonder that Professor Greene has found it impossible to get through his task with less delay. It is evident, indeed, throughout the work, that it is the result of a patient and conscientious study, both of the literature of the subject and of the animals themselves; and as Professor Greene belongs to the most advanced school of zoologists, we have in the present manual an excellent epitome of the views of that school upon the second great division of the animal kingdom.

Of the necessity for the establishment of a distinct group for the gelatinous Radiata of Cuvier there can hardly be two opinions, although, perhaps, there may be some doubt amongst naturalists as to the position to be assigned to the Echinodermata. The difficulty, however, is not to be got over by ignoring, as has been done recently in some cases, the great divisions or subkingdoms altogether, and treating classes as the highest groups in the animal kingdom. This is simply shirking the question; and it has the great disadvantage of obscuring or altogether throwing out of sight many of those interesting points of morphology which it has been the object of the researches of some of our leading naturalists to bring to light. This view is evidently that of Professor Greene, who regards the Polypes and Acalephs of Cuvier as constituting a primary division of the animal kingdom, distinguished by "a plan of structure, or relative position of parts, peculiar to itself," for which he adopts Leuckart's name of Cœlenterata.

The members of this group are divided by our author into two great classes, the Hydrozoa and Actinozoa,—the former including the Hydroid polypes and the greater part of the Acalephs; the latter the Helianthoid and Asteroid polypes, with the *Ctenophora*, which are removed from their previous association with the Acalephs. This is the greatest departure from the old system to be found in Professor Greene's classification; and although it may at first sight seem like a violation of old-established relations, it appears to us that the elimination of the *Ctenophora* is necessary to give homogeneity to the class Hydrozoa. Whether they ought to be placed

in such intimate alliance with the true Polypes may still be questionable, although the relationship of *Beroë* to the Helianthoid polypes through *Ilyanthus*, *Peachia* and *Philomedusa* seems to be pretty clearly established.

In the classification of the Hydrozoa, our author, following the lead of Professor Huxley, divides these animals into seven orders. These are, 1. *Hydridæ*; 2. *Corynidæ*; 3. *Sertularidæ*; 4. *Caly-cophoridæ*; 5. *Physophoridæ*; 6. *Medusidæ*; and 7. *Lucernaridæ*. Of these the first includes only the genus *Hydra*; the second and third the Tubularian and Sertularian Zoophytes of older writers; the fourth and fifth the Siphonophorous Acalephs; and the last two the Discophora, with the addition of the genus *Lucernaria*. The *Medusidæ*, however, contrary to the expectations which might be raised from their name, do not include the higher *Medusæ*, but constitute a provisional order for the reception of those of the Gymnophthalmata of Forbes of which the derivation from polype-stocks has not yet been proved. Amongst these a few, belonging to the families *Æginidæ* and *Trachynemidæ*, are stated by Gegenbaur to produce Medusoid progeny directly from the egg; and it seems probable that the same phenomenon may occur in *Geryoniadæ*. Under any circumstances, considering the numerous gaps which still exist in our knowledge of the life-history of many of these organisms, Professor Greene has certainly exercised a sound discretion in retaining, at all events for the present, a special group for the Naked-eyed Medusæ. The higher forms of Discophora are placed in the order *Lucernaridæ*.

The classification of the Actinozoa presents less divergence from the views of former writers. We find the orders *Zoantharia* and *Aleyonaria*, which require no explanation; the *Rugosa*, or tabulated corals of the older rocks; and, lastly, the *Ctenophora*, of whose transfer from the Acalephs we have already spoken.

The general structure and development and the geographical and geological distribution of the members of these groups are described in much detail, and with admirable simplicity and clearness; and the text is illustrated by numerous excellent woodcuts: in fact, the amount of information condensed into the comparatively few pages of this little book is quite astonishing; and it will certainly prove a most valuable handbook in the investigation of the lower forms of marine animals.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

June 11, 1861.—Dr. J. E. Gray, F.R.S., V.P., in the Chair.

ON THE HABITS OF THE PIPE-FISH AND OTHER FISHES.

By DR. J. E. GRAY, F.R.S., V.P.Z.S., ETC.

In examining the tanks in the Zoological Gardens, I was struck